REMARKS

Claims 1-2 and 4-20 are pending. Claims 1, 4-5, 7, 9-11, 13-14 and 17 have been amended for grammatical clarity. No new matter is added.

Claims 1, 2, 4, 5, and 7-20 are objected to because of the following informalities: The wordings of the claim language are very awkward and redundant. (Office Action, page 2)

Claim 1 has been amended as suggested by the Examiner on p.2 of the Office Action, making this rejection now moot.

Claims 1, 2, 4, 5, and 7-20 are newly rejected under 35 U.S.C. 103(a) as being unpatentable over Boralle et al (Oligostibenoids from Gnetum venosum, Phytochemistry, 34 (5): 1403-1407, 1993), in view of Berry (Cyclopropene fatty acids in Gnetum gnemon (L.) seeds and leaves, Journal of the Science of Food and Agriculture, (1980) Vol. 31, No. 7, pp. 657-662), and further in view of Iliya et al (Iliya et al, Stilbene derivatives from two species of Gnetaceae, Chem. Pharm. Bull. 50 (6) 796-801 (2002)), and Qi (Qi, Optimum for extraction processing of stilbene glucoside from Polygonum multiflorum, Zhongcaoyao (2002), 33(7), 609-611). (Office Action, page 3)

As will be shown below the combination of the cited art cannot logically make the invention now claimed obvious.

Qi et al.

Qi et al disclosed the *extraction of stilbene glucoside* from *P. multiflorum* with 50% EtOH is best under heat reflux for 30 min. The peak of resveratrol (aglycon: production by hydrolysis of stilbene glucoside), however, is not recognized on HPLC. This result shows that glucosidase does not act at all and this extraction depends only on the penetration of solvent and the solubility of the stilbene glucoside which is most soluble in 50% EtOH.

A glucosidase is inactivated under the heat reflux in solvent, because Qi et al. does not consider the presence and the action of the glucosidase in *P. multiflorum.*

The constituents in the extracts of other *Polyogonum* extracts are for example:

1) Kiem PV et al., *Arch. Pharm. Res.*, 2008, 31(11), 1477-82.

They disclose extracting a whole plant of *P. hydropiper* with MeOH to isolate phenylpropanoid esters of sucrose.

2) L. O. Demirezer et al., *Pharmaceutical Biology*, 2006, 44(6), 462-66.

They disclose extracting aerial parts of *P. alipinum* with MeOH to isolate flavonol glycosides.

3) Xiao-Bai Sun et al., *Chemistry of Natural compounds*, 2007, 43(5), 563-65.

They disclose extracting whole roots of *P.bistorta* to isolate triterpenoids, cumarin and steroid.

4) F. Yang et al., *J. Chromatography A*, 2001, 919(2), 443-8.

They disclose separating resveratrol and anthraglycosides from the crude extract of *P. cuspidatum* by high-speed counter-current chromatography.

The above examples demonstrate that each plant possesses different constituents, even if the plants belong to the same *Polyogonanceae* genus.

Iliya et al.

The yields of constituents in Iliya et al. by extraction of root and stem with acetone and MeOH are very poor. This result shows *merely extraction and isolation of stilbenoids*. They do not also notice the presence and the action of glucosidase in the root and stem. Wallance et al. extract leaves of *G. gnemon* with acetone and water (1:1) to isolate *C*-glycosyl flavones distinct from the stilbenoids (*Phytochemistry*, 1978, 17, 1809-1810).

Boralle et al.

In Boralle et al. *G. venosum* kernels are extracted by exhaustive percolation with EtOH to isolate stilbenoids containing gnetin C except their glucosides (gnemonoside A etc.). They

disclose merely carrying out the extraction of the kernels and *isolation of the stilbenoids*, and do not notice the presence and action of glucosidase in the kernels, as well.

Berry

Berry discloses extracting cyclopropene fatty acids from *G. gnemon* seeds and merely introducing the seeds and leaves as foodstuffs, but does not suggest existence of stilbenoids and application of the extract to seasonings, antibacterial substances and cosmetics.

The cited art alone merely discloses the extraction and isolation of stilbenoids generally. The claimed invention, however, differs from the combination of the cited art in utilization of the aging which converts the stilbene glucoside into the aglycon by hydrolysis without addition of some glucosidases. The aging means action (for example, hydrolysis) of glucosidase in endosperms. The applicants found out the phenomenon given only gnemonoside A by extraction of Emping Belinjo produced by heat-processing of endosperms (Comparison I). The enzyme reaction (hydrolysis) is affected the concentration of polar organic solvent, soak (extract) temperature and time. On the other hand, skilled artisans who do not notice this phenomenon make the enzyme reaction inhibited and inactivated by use of single polar organic solvent and heat reflux.

The applicants investigated extraction and aging of endosperms under various conditions to discover *the aqueous extractant containing the polar organic solvent concentration in the range of 15% to 80%* and soak temperature below about 70°C. The extractant ranging in the concentration from 40% to 60% resulted in gnetin C as major composition in contrast to gnemonoside A. Thus the composition ratio of gnetin C in the extract has been controlled. The extract containing antimicrobial gnetin C brings about extension of the shelf life of foods and cosmetics in addition to improvement of flavor of vegetable extract.

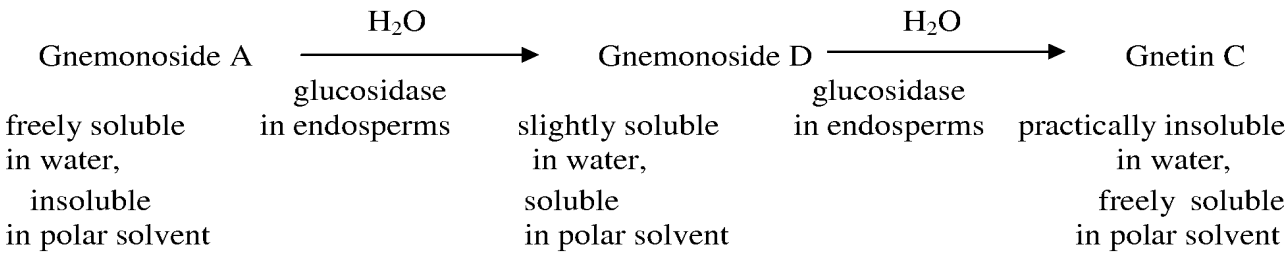
Aging

In the case of polar organic solvent concentration below 10%, gnemonoside A in matrix of endosperms is hydrolyzed by glucosidase to form slightly soluble gnemonoside D and

insoluble gnetin C, which separate in the vicinity of the glucosidase to inhibit dissolution of gnemonoside A. The hydrolysis is consequently depressed.

In the case of polar organic solvent concentration in the range of 15% to 80%, hydrolysis of gnemonoside A gives gnemonoside D which is continuously hydrolyzed to gnetin C, since all of gnemonoside A, gnemonoside D and gnetin C dissolve in the solvent.

In the case of polar organic solvent concentration over 90%, hydrolysis of gnemonoside A, which is insoluble in the solvent, does not proceed.



As noted above, an artisan of ordinary skill cannot expect from the cited art that such a glucosidase exists in the endosperms, not to mention making antibacterial and antioxidative gnetin C from gnemonoside A through gnemonoside D under appropriate conditions which are the aqueous extractant containing the polar organic solvent concentration in the range of 15% to 80% and soak temperature below about 70°C.

The utilization of the glucosidase by aging first led to better yield of such a gnetin C. This result enables to apply foods and cosmetics as seasoning, antibacterial substance and antioxidant.

In light of the chemical differences of the claimed invention which are not suggested by the combination of the cited art, it is respectfully requested that the rejection be reconsidered and withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

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Respectfully submitted,

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